

Pictometry User Group

January 23rd, 2014



LOS ANGELES • REGION
LAR|IAC
imagery acquisition consortium



Agenda

- Introduction to LAR-IAC – LA County
 - What is LAR-IAC
 - LAR-IAC4
- LAR-IAC Benefits
 - Property and Planning
 - Economic Development
 - Public Safety
 - Public Works
 - Policy Development
 - Citizen Engagement
 - Research
- Tools we use
 - Pictometry Online
 - IPA
 - Pictometry Connect

An aerial photograph of a sprawling city, likely New York City, showing a dense concentration of skyscrapers in the lower half and a more residential, hilly area in the upper half. The text "WHAT IS LARIAC?" is overlaid in the lower-left quadrant.

WHAT IS LARIAC?

What is LAR-IAC?

- Los Angeles Regional Imagery Acquisition Consortium (LAR-IAC)

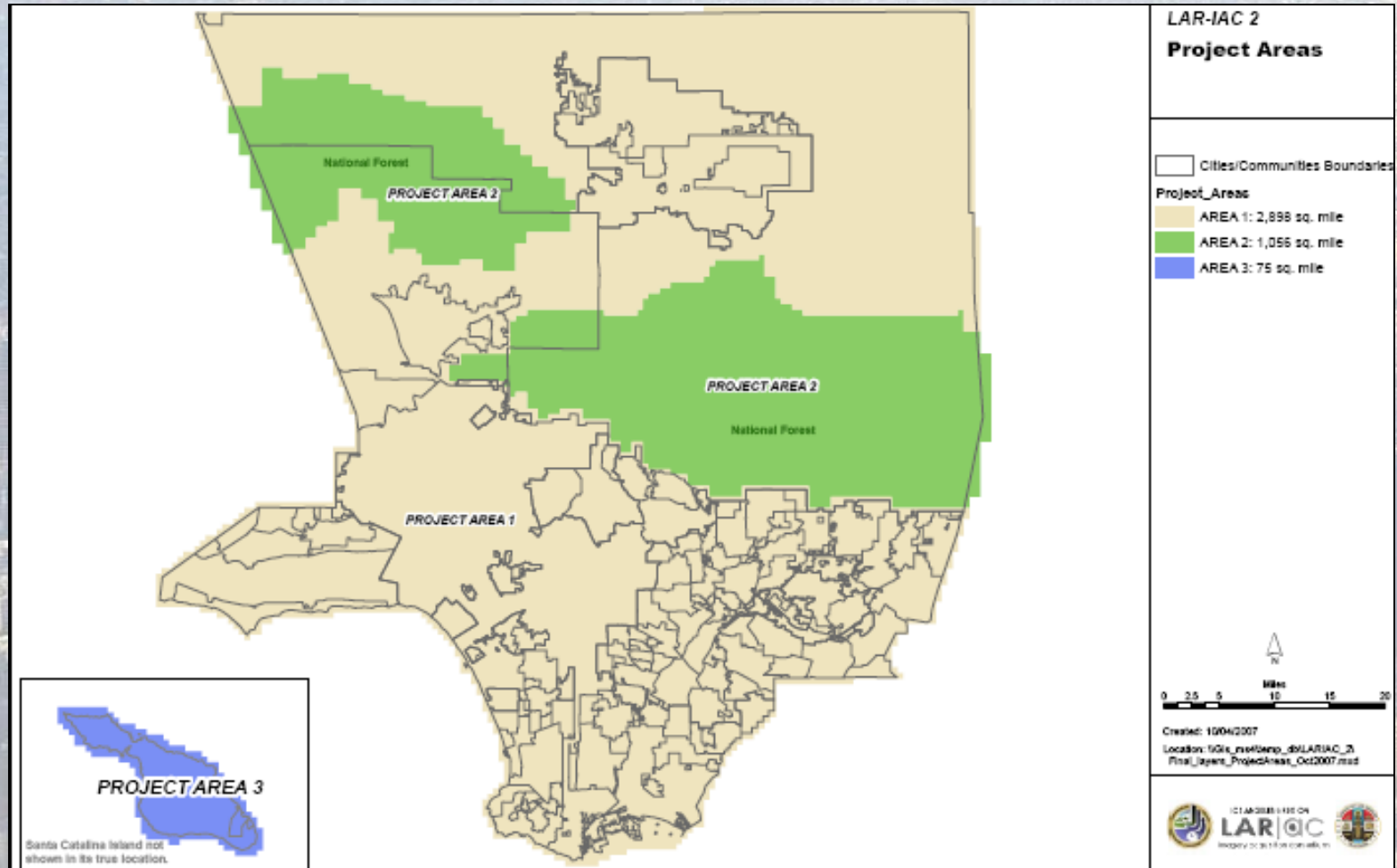
“LAR-IAC is multi-jurisdictional purchasing arrangement that enables participating local governments and agencies to benefit from combined economies of scale to efficiently and cost-effectively acquire high definition aerial data.”

- Established in 2003 by LA County Regional Planning and Chief Information Office.





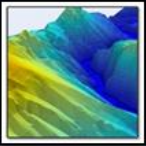
Geographic Scope

- Los Angeles County
 - 4,083 sq. miles plus small buffer area
- Split into regions
 - Area #1 (Urban)
 - Project area covers approximately 3,000 sq. miles
 - Area #2 (National Forest)
 - Project area covers approximately 1,050 sq. miles

LARIAC Geographic Scope



LAR-IAC4 Product Matrix

Data Types	LARIAC1 2006	LARIAC2 2008	LARIAC3 2011	LARIAC4 2014
Orthogonal Imagery (4-inch) 	X (including Infrared)	X	X	X (including Infrared and 1-foot imagery from 2012 and 2013)
Oblique Imagery 	X	X	X	X
Building Outlines 		X		X
Elevation Data  	X			X
Derived Data <ul style="list-style-type: none"> • Tree Canopy • Solar Insolation • NDVI (Permeability) • Slope • <u>Hillshade</u> • Height 	X			X

Unparalleled Accuracy

- LAR-IAC ensures accuracy
 - American Society for Photogrammetry and Remote Sensing (ASPRS)
 - Class 1 = +/- 1 foot accuracy (Urban Areas)
 - Class 2 = +/- 2 foot accuracy (National Forest)
 - Separate contract with Dewberry to provide Quality Control
- This isn't a pretty picture.
 - Pre-engineering grade.
 - You can be sure of your measurements.
 - Reduce your project & development costs.
- This isn't a picture from the internet.
 - Sorry Google ...

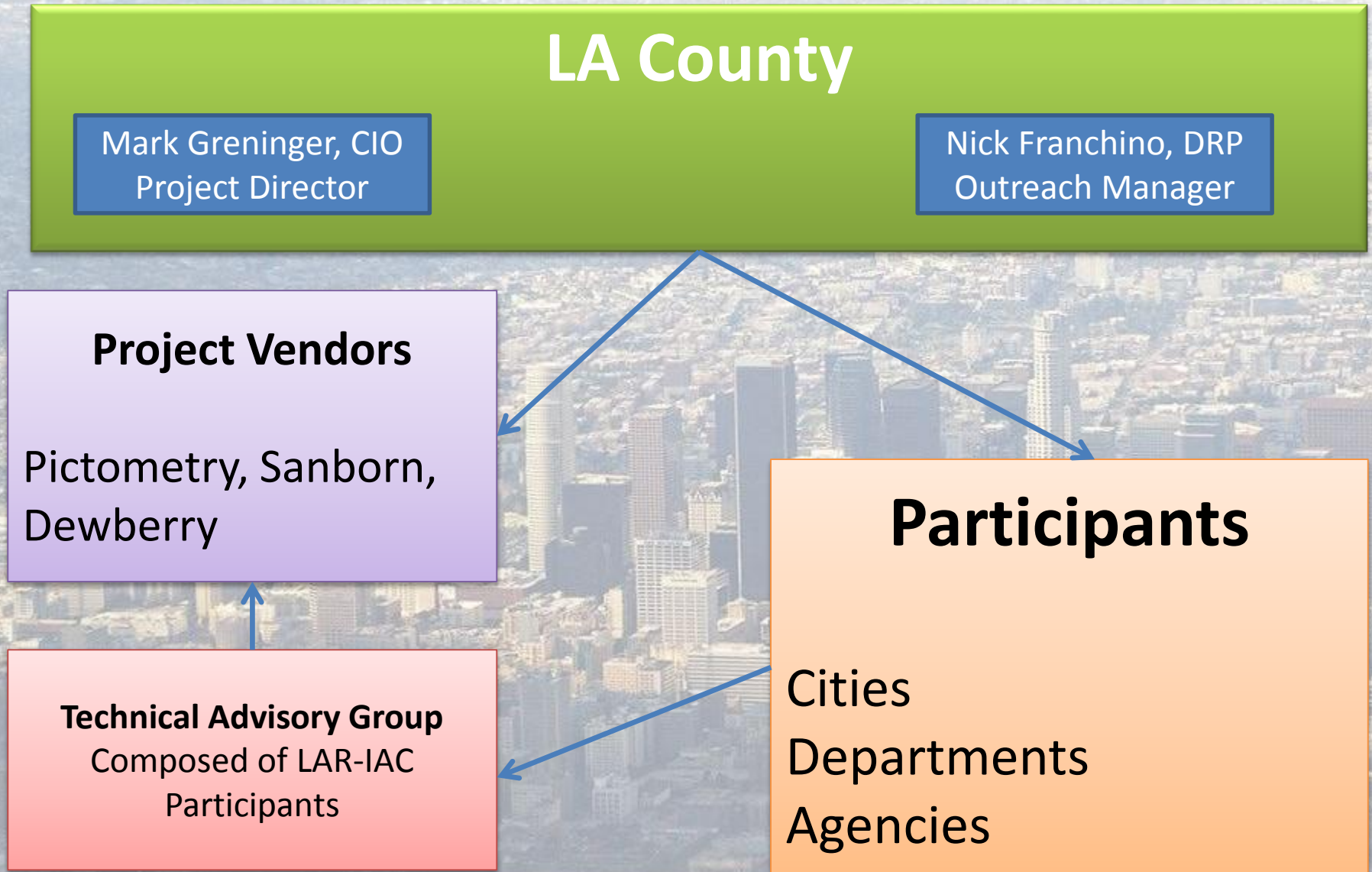
An aerial photograph of a city skyline, likely San Francisco, showing a dense cluster of skyscrapers and a vast urban area extending into the distance. The text 'LAR-IAC ORGANIZATION' is overlaid in large, bold, black capital letters across the lower-middle portion of the image.

LAR-IAC ORGANIZATION

LAR-IAC Structure

- LA County
 - Executes and manages contracts.
 - Assumes contract risk & provides bridge funding
 - Organizes meetings and provides support.
 - The single point of contact for LAR-IAC.
- Participants (including LA County)
 - Provide funding to support the project
 - Provide members for the Technical Advisory Group (TAG) to review details.
- Project Vendors
 - Provide expertise and capabilities to get the job done.

LAR-IAC Team Structure



39 Cities

#	Cities	LAR-IAC 1	LAR-IAC 2	LAR-IAC 3
1	City of Agoura Hills	X		X
2	City of Azusa	X	X	
3	City of Bellflower			X
4	City of Beverly Hills	X	X	X
5	City of Burbank	X	X	X
6	City of Carson	X	X	X
7	City of Cerritos	X	X	
8	City of Claremont		X	X
9	City of Covina	X	X	
10	City of Culver City	X	X	X
11	City of Diamond Bar	X	X	
12	City of Downey	X		X
13	City of El Segundo	X	X	X
14	City of Glendale	X	X	X
15	City of Hermosa Beach	X	X	X
16	City of Industry	X	X	X
17	City of Inglewood	X	X	X
18	City of Irwindale	X	X	
19	City of La Canada Flintridge	X	X	X
20	City of La Habra Heights	X	X	
21	City of Lakewood	X	X	X
22	City of Lancaster	X		
23	City of Long Beach	X		X
24	City of Los Angeles	X	X	X
25	City of Manhattan Beach	X	X	X
26	City of Monrovia	X		
27	City of Monterey Park	X	X	
28	City of Palmdale	X		
29	City of Pasadena	X	X	X
30	City of Redondo Beach	X	X	
31	City of San Dimas			X
32	City of Santa Clarita	X	X	X
33	City of Santa Fe Springs	X		X
34	City of Santa Monica	X	X	X
35	City of South El Monte	X	X	
36	City of South Pasadena			X
37	City of Torrance	X	X	X
38	City of Westlake Village	X		
39	City of Whittier	X	X	X

34 Departments and Agencies

#	Agencies	LAR-IAC 1	LAR-IAC 2	LAR-IAC 3
County Departments				
40	Agricultural Commission/Weights and Measures	X	X	X
41	Chief Executive Office/Office of Emergency Management	X	X	X
42	Department of Animal Care & Control		X	X
43	Department of Beaches & Harbors	X	X	X
44	Department of Children & Family Services		X	X
45	Department of Community & Senior Services		X	X
46	Department of Health Services	X	X	X
47	Department of Mental Health		X	X
48	Department of Parks & Recreation	X	X	X
49	Department of Public Health	X	X	X
50	Department of Public Social Services		X	X
51	Department of Public Works	X	X	X
52	Department of Regional Planning	X	X	X
53	Fire Department		X	
54	Internal Services Department	X	X	X
55	Office of the Assessor	X	X	X
56	Probation Department		X	X
57	Public Library		X	X
58	Registrar-Recorder/County Clerk	X	X	X
59	Sheriff's Department		X	X
Local Agencies				
60	Alameda Corridor Transportation Authority		X	
61	Caltrans	X		
62	LA County Sanitation Districts	X	X	X
63	LARGIN (LA Region Gang Information Network)	X	X	
64	Port of Los Angeles	X	X	X
65	Santa Catalina Island Conservancy	X	X	X
66	US Geological Survey		X	X
67	Amigos de Los Rios			X
68	US National Guard			X
69	Los Angeles Air Force Base			X
Educational Institutions				
70	Palos Verdes on the NET			X
71	California State University Long Beach	X	X	X
72	California State University Los Angeles		X	
73	University of Southern California (USC)	X	X	X
74	University of California at Los Angeles (UCLA)	X	X	X

Distribution and Sub-licensing

- Distribution
 - 4-inch orthos can be displayed on the Internet
 - Oblique imagery can be shown on the Internet
 - Note: measurement tools for internal use only
 - 1 foot orthos can be distributed to the Public
- Licensing
 - Participant Agreement
 - Sub-licensing
 - One simplified form to cover all data products for sub-contractors

Benefits



Planning

- Advance Planning (long range)
- Current Planning (cases and permitting)
- Code Enforcement (inspections)
- Support – Map creation, web sites, etc.
- We started using in 1998

For Maps







LOS ANGELES COUNTY

**SENSITIVE LAND USES NEAR
MEDICAL MARIJUANA DISPENSARY**
15640 LEFFINGWELL ROAD
APN: 8040-019-011

SOUTH WHITTIER - SUNSHINE ACRES

LEGEND

-  MEDICAL MARIJUANA DISPENSARY
-  PARCELS
-  PARCELS WITH SENSITIVE LAND USES
-  CITY / UNINCORPORATED BOUNDARY

AERIAL IMAGERY (2008): LOS ANGELES REGION
IMAGERY ACQUISITION CONSORTIUM (LAR-IAC)

DETAILS REGARDING AFFECTED PARCELS:

GRAM CRACKER DAYCARE
15745 WILMAGLEN DRIVE
APN: 8030-001-050

MCDONALD'S RESTAURANT & PLAY PLACE
15710 LEFFINGWELL ROAD
APN: 8040-019-025

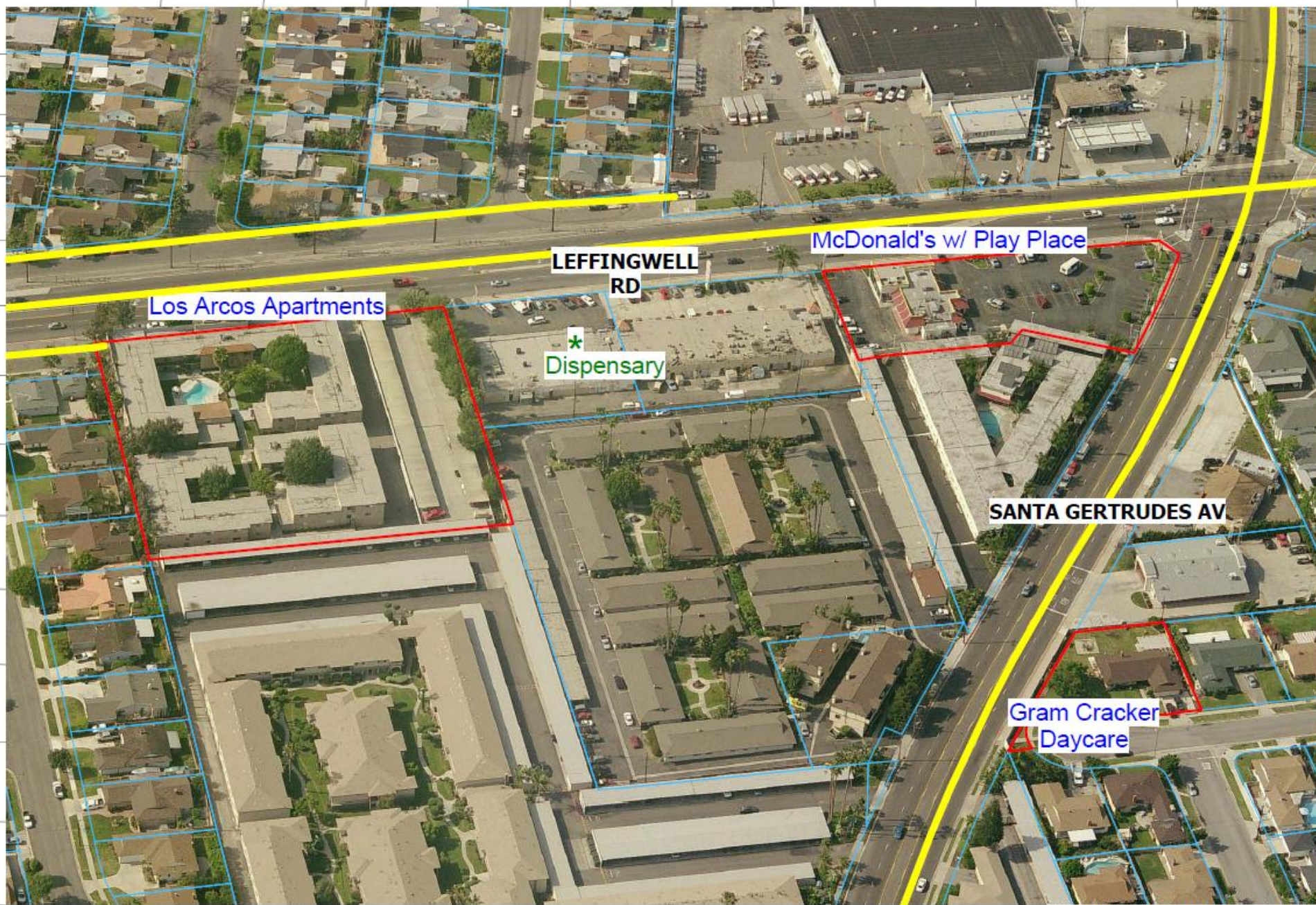
NOTE: DISTANCES SHOWN ON THE MAP ARE APPROXIMATE.



LOS ANGELES COUNTY
Department of Regional Planning
320 W. Temple St.
Los Angeles, CA 90012

0 100 200 300
FEET

Map prepared by DRP GIS Section / November 2009
Printed: _____



Los Arcos Apartments

LEFFINGWELL
RD

McDonald's w/ Play Place

*
Dispensary

SANTA GERTRUDES AV

Gram Cracker
Daycare

An aerial photograph of a sprawling city, likely New York City, showing a dense concentration of skyscrapers in the lower half and a more residential, hilly area in the upper half. The text "ECONOMIC DEVELOPMENT" is overlaid in the center.

ECONOMIC DEVELOPMENT



Boulevards at South Bay



Industrial and Retail Development



South Bay Pavilion

An aerial photograph of a city skyline, likely San Francisco, showing a dense cluster of skyscrapers in the foreground and a vast, hilly residential area extending into the background. The text "PUBLIC SAFETY" is overlaid in large, bold, black capital letters on the left side of the image.

PUBLIC SAFETY



Location

Screenshot of the Pictometry Online 1.10.2 web application interface. The browser address bar shows the URL: <http://pol.pictometry.com/en-us/app/>. The application title is "Pictometry Online 1.10.2".

The interface includes a workspace panel on the left with a tree view showing "Workspace (Author)" containing "Annotations", "Bookmarks", and "Layers". The "Layers" section lists "Address Points", "Building Outlines (2008)", and "City Boundaries". Below this is a "Properties" table with columns "Name" and "Value".

The main map area displays an aerial view of a landscape with a large antenna tower, a winding road, and a building. A location label indicates: "Location: 34.01586, -118.383126 Degrees". The map includes a compass rose, a scale bar, and a "Pictometry" logo.

The bottom status bar shows: "Location: 34.01586, -118.383126 Degrees" and "Date: 12/07/2011 | Level: Neighborhood | Scale: 75%".



Above Sea Level

Screenshot of the Pictometry Online 1.10.2 web application interface. The browser address bar shows the URL <http://pol.pictometry.com/en-us/app/>. The application displays an aerial photograph of a landscape featuring a large stadium, a tall radio tower, and several large circular structures. A tooltip indicates the ground elevation at a specific point: "Ground Elevation: 364.45 Feet".

The interface includes a left sidebar with a "Workspace" panel showing a tree view of the project structure (Workspace (Author), Annotations, Bookmarks, Layers) and a "Properties" panel with a table for object details.

Name	Value
------	-------

The bottom status bar displays the ground elevation: "Ground Elevation: 364.45 Feet". The bottom right corner shows the date and location: "Date: 12/07/2011 | Level: Neighborhood | Scale: 75%".



Height

Screenshot of the Pictometry Online 1.10.2 interface showing an aerial view of a telecommunications tower. The interface includes a browser window, a search bar, and various toolbars.

Browser Window: The address bar shows <http://pol.pictometry.com/en-us/app/>. The page title is "Pictometry Online".

Search Bar: The search bar contains the text "Google".

Workspace: The workspace area displays an aerial photograph of a telecommunications tower. A yellow line indicates the height of the tower, labeled "Height: 270.33 Feet".

Properties Table:

Name	Value

Selections:

Map Controls: The map controls include a compass, a scale bar (1/13), and a zoom in/out button.

Map Data: The map data includes a Bing map overlay showing the tower's location relative to surrounding features like "Culver City Park" and "Hawthorne Blvd".

Footer: The footer displays the text "Height: 270.33 Feet" and "Date: 12/07/2011 | Level: Neighborhood | Scale: 100%".



Brush Clearance

Screenshot of the Pictometry Online 1.10.2 interface showing a brush clearance project.

Workspace (Author)

- Annotations
- Bookmarks
- Layers
 - Address Points
 - Building Outlines (2008)
 - City Boundaries

XYZ Measurement 1 Properties

Name	Value
Checked	false
Class	defaultmarker
Description	Latitude: 34.0...
Image	
Latitude	34.023293
Link	
Link Text	

Selections

Area: 1.28 Acres

Measurements:

- 123.07 Feet
- 425.62 Feet
- 520.09 Feet
- 64.89 Feet
- 68.47 Feet
- 218.87 Feet

Map

Person

Header

Culver City Park

bing

Terms of Use

Area: 1.28 Acres

Date: 01/17/2011 | Level: Community | Scale: 100%



Strategizing Communications

Screenshot of the Pictometry Online 1.10.2 web application interface. The browser address bar shows the URL: <http://pol.pictometry.com/en-us/app/>. The application title is "Pictometry Online 1.10.2".

The interface includes a workspace area on the left with a tree view showing "Workspace (Author)" containing "Annotations", "Bookmarks", and "Layers". The "Layers" list includes "Address Points", "Building Outlines (2008)", and "City Boundaries". Below this is a "Properties" table with columns "Name" and "Value", and a "Selections" section.

The main display area shows an aerial photograph of a building complex. A yellow line indicates a height measurement of 44.85 Feet. The interface also features a toolbar with various tools for navigation and analysis, and a "Pictometry" control panel on the right with a compass and scale indicator.

At the bottom left, the text "Height: 44.85 Feet" is displayed. At the bottom right, the text "Date: 02/27/2011 | Level: Neighborhood | Scale: 100%" is shown.



Will The Ladder Reach?

Screenshot of the Pictometry Online 1.10.2 web application interface. The browser address bar shows <http://pol.pictometry.com/en-us/app/>. The application displays an aerial view of a building complex in Culver City, California. A yellow line is drawn across the image, indicating a measurement of 78.86 Feet. The interface includes a workspace panel on the left with a tree view showing 'Workspace (Author)' containing 'Annotations', 'Bookmarks', and 'Layers'. The 'Layers' section lists 'Address Points', 'Building Outlines (2008)', and 'City Boundaries'. Below the workspace is a table titled 'XYZ Measurement 1 Properties'.

Name	Value
Checked	false
Class	defaultmarker
Description	Latitude: 34.0...
Image	
Latitude	34.023293
Link	
Link Text	

The main map area shows an aerial view of a building complex with a yellow line indicating a measurement of 78.86 Feet. A compass rose and a scale bar are visible in the top right corner. A small inset map in the bottom right corner shows the location within Culver City, with labels for 'Downtown Culver City', 'Downtown', 'Van Buren Pl', 'Irving Pl', 'Lafayette', 'Rocky', and 'Lafayette'.

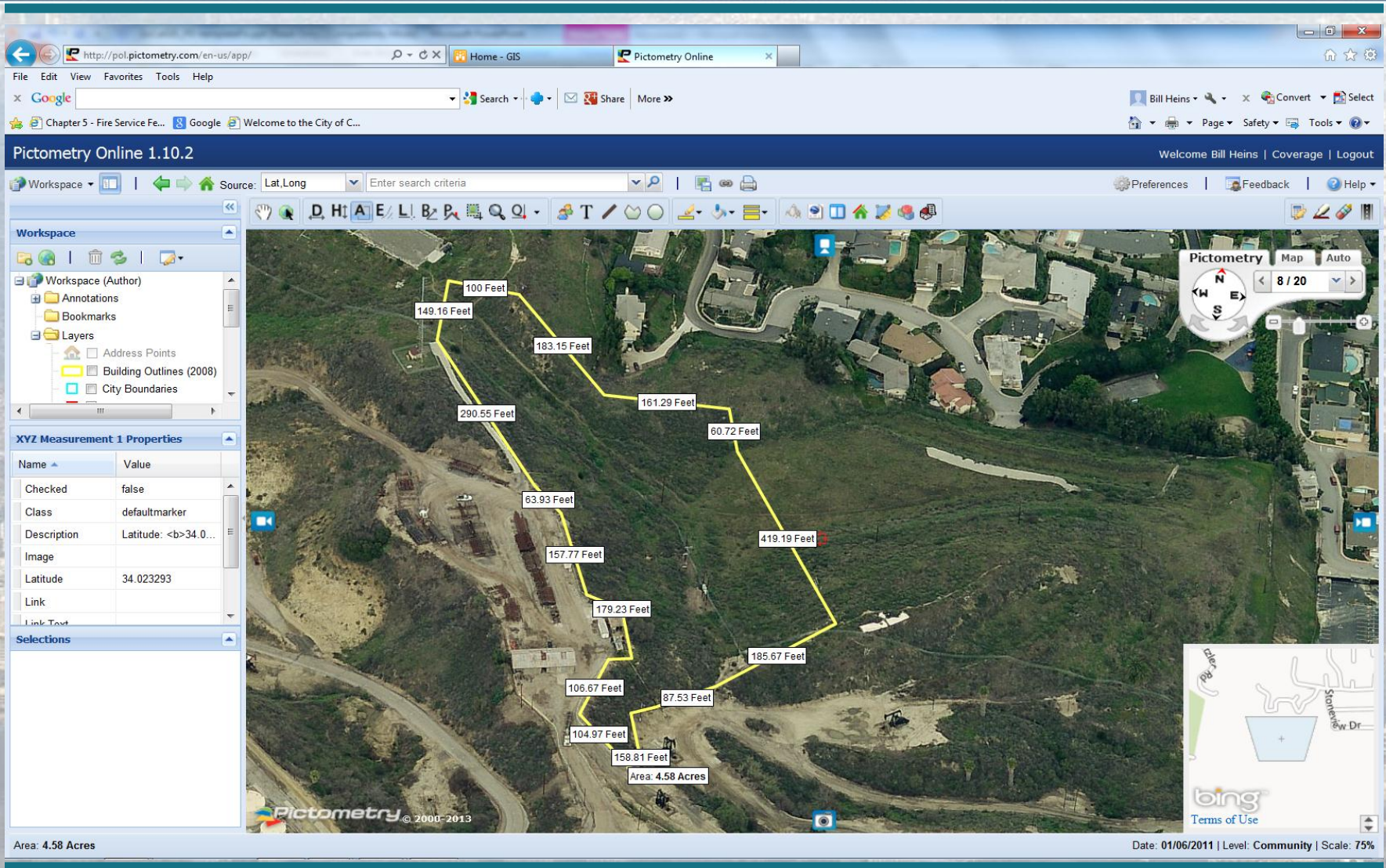
Distance: 78.86 Feet

© 2000-2013

Date: 03/01/2011 | Level: Neighborhood | Scale: 150% | Date: 12/07/2011 | Level: Neighborhood | Orientation: North up Oblique

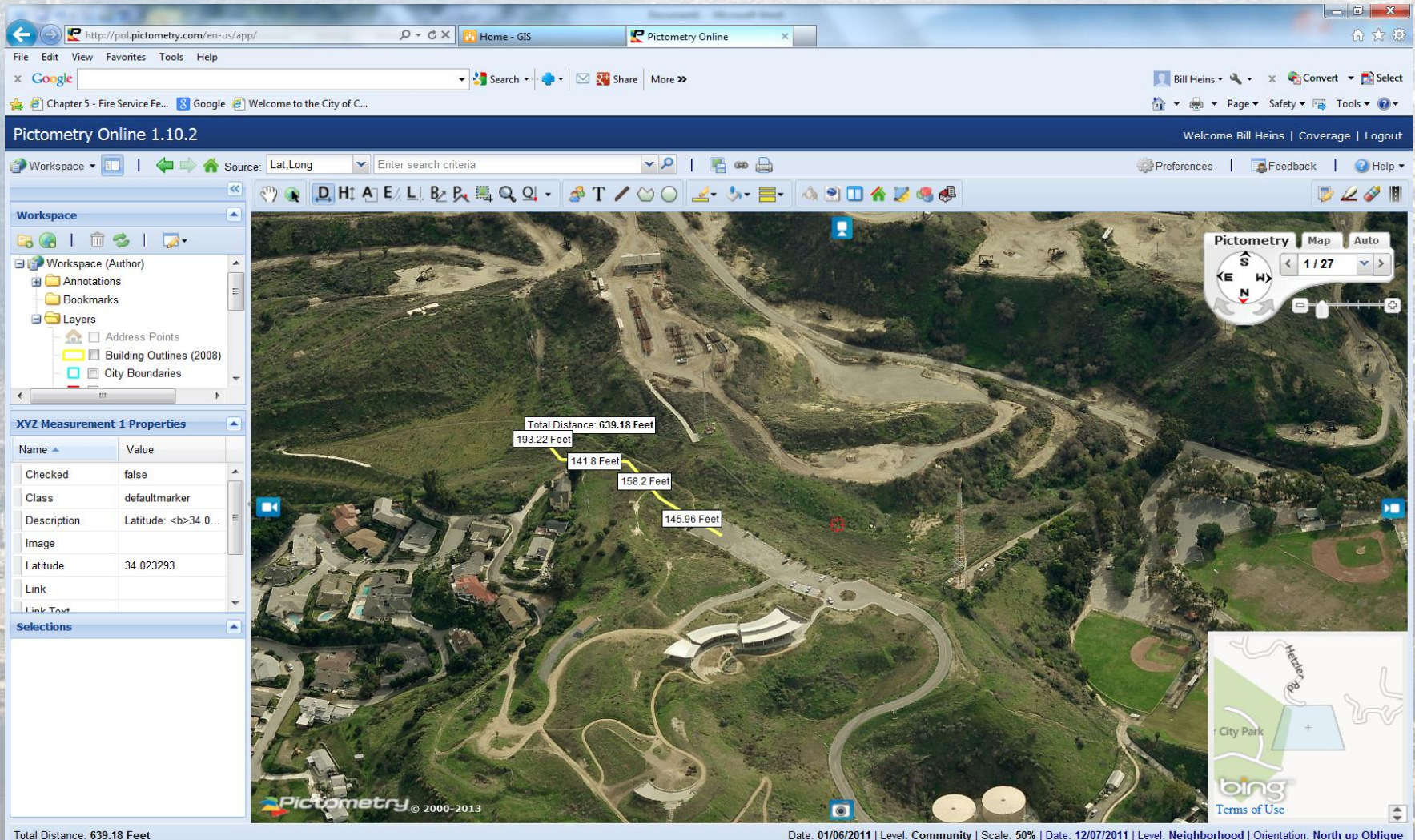


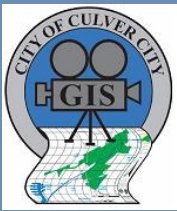
How Big Was The Fire?





How Much Hose Needed?





Where Will The Fire Go?

Screenshot of the Pictometry Online 1.10.2 web application interface. The browser address bar shows the URL: <http://pol.pictometry.com/en-us/app/>. The application title is "Pictometry Online 1.10.2".

The interface includes a workspace panel on the left with a tree view showing "Workspace (Author)" containing "Annotations", "Bookmarks", and "Layers". The "Layers" section lists "Address Points", "Building Outlines (2008)", and "City Boundaries". Below this is the "XYZ Measurement 1 Properties" panel with a table:

Name	Value
Checked	false
Class	defaultmarker
Description	Latitude: 34.0...
Image	
Latitude	34.023293
Link	
Link Text	

The main map area displays an aerial view of a residential area with overlaid contour lines indicating elevation. A yellow marker is placed on the map, and a tooltip shows "Ground Elevation: 310.85 Feet". The map includes a scale bar (1/27) and a compass rose. A small inset map in the bottom right corner shows the location relative to "Hickory St" and "Sawyer St".

At the bottom of the interface, the text "Ground Elevation: 310.85 Feet" is displayed on the left, and "Date: 01/06/2011 | Level: Community | Scale: 50%" is displayed on the right.



How Long/Steep?

Screenshot of the Pictometry Online 1.10.2 interface showing an aerial view of a landscape with a yellow line indicating a measurement. The interface includes a toolbar, a workspace panel, and a properties panel.

Workspace (Author)

- Annotations
- Bookmarks
- Layers
 - ☐ Address Points
 - ☐ Building Outlines (2008)
 - ☐ City Boundaries

XYZ Measurement 1 Properties

Name	Value
Checked	false
Class	defaultmarker
Description	Latitude: 34.0...
Image	
Latitude	34.023293
Link	
Link Text	

Selections

Ground Elevation: Difference 267.29 Feet Distance 821.24 Feet Grade 32.5%

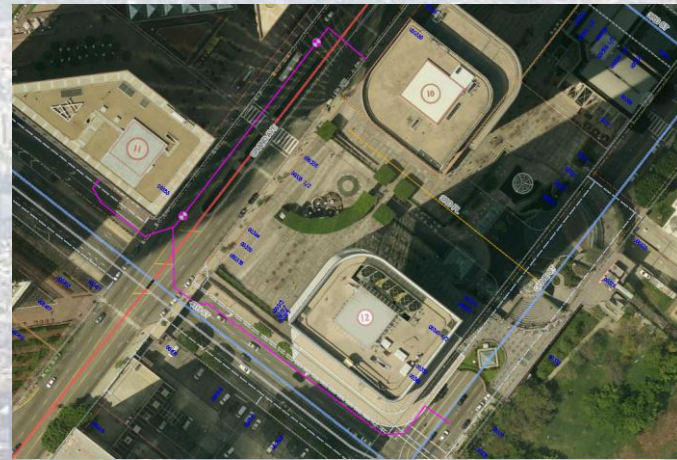
Date: 01/06/2011 | Level: Community | Scale: 50%

An aerial photograph of a sprawling city, likely San Francisco, showing a dense concentration of skyscrapers in the downtown area and a vast expanse of residential and commercial buildings extending into the surrounding hills. The image is slightly hazy, giving it a historical or archival feel.

PUBLIC WORKS

Customer Service

- When issuing Public Works permits Counter Staff
- Check LARIAC imagery for site conditions where the work will be performed.



Reduced field trips

- Check LARIAC before determining dedication requirements

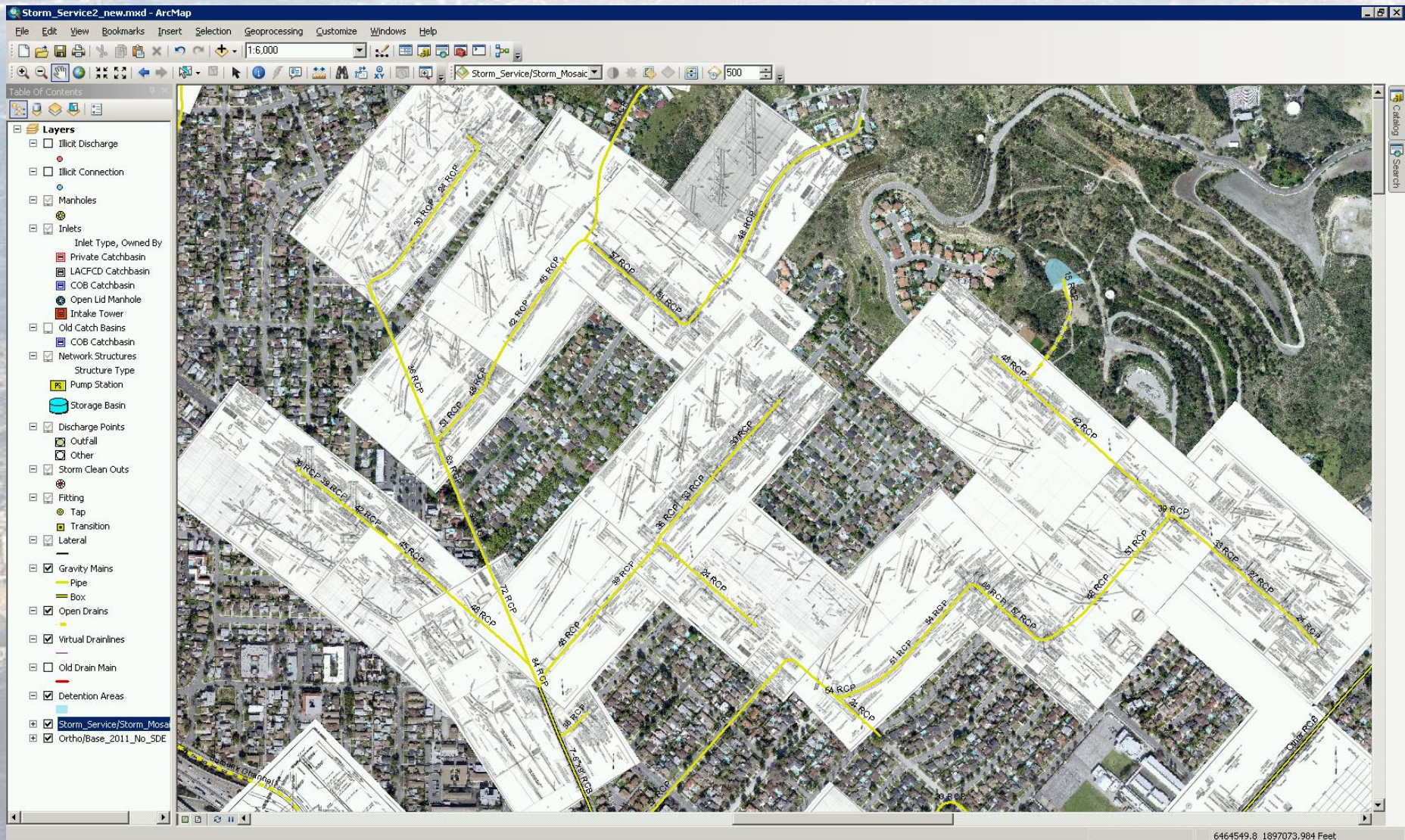


Investigations

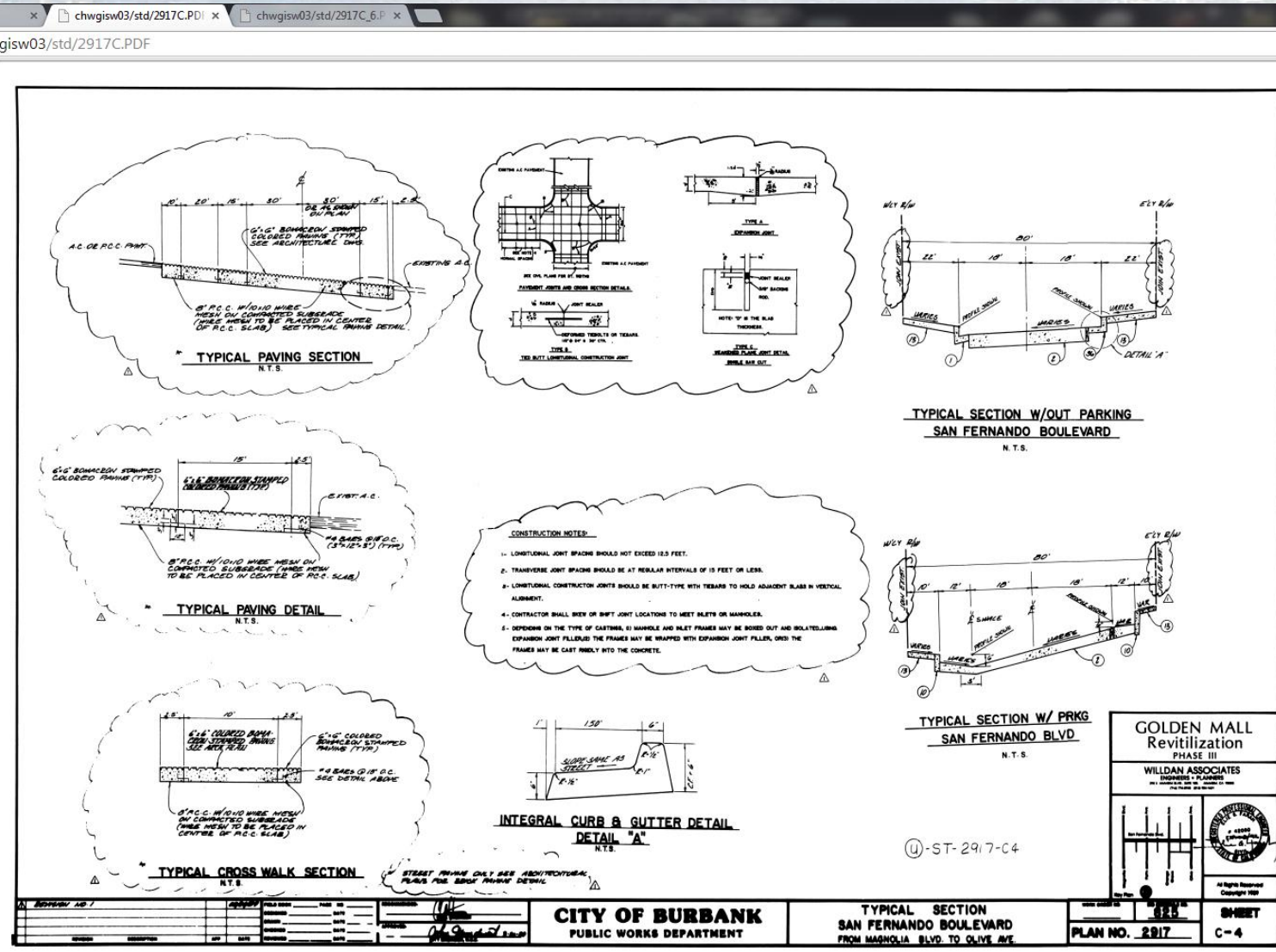
- View Field Conditions
- Overlay proposed improvements with imagery during the design process.
- Inspections
- Locate Assets
 - Catch Basins, Maintenance Holes
 - Street Lights
 - Traffic Signals
 - Stop Signs



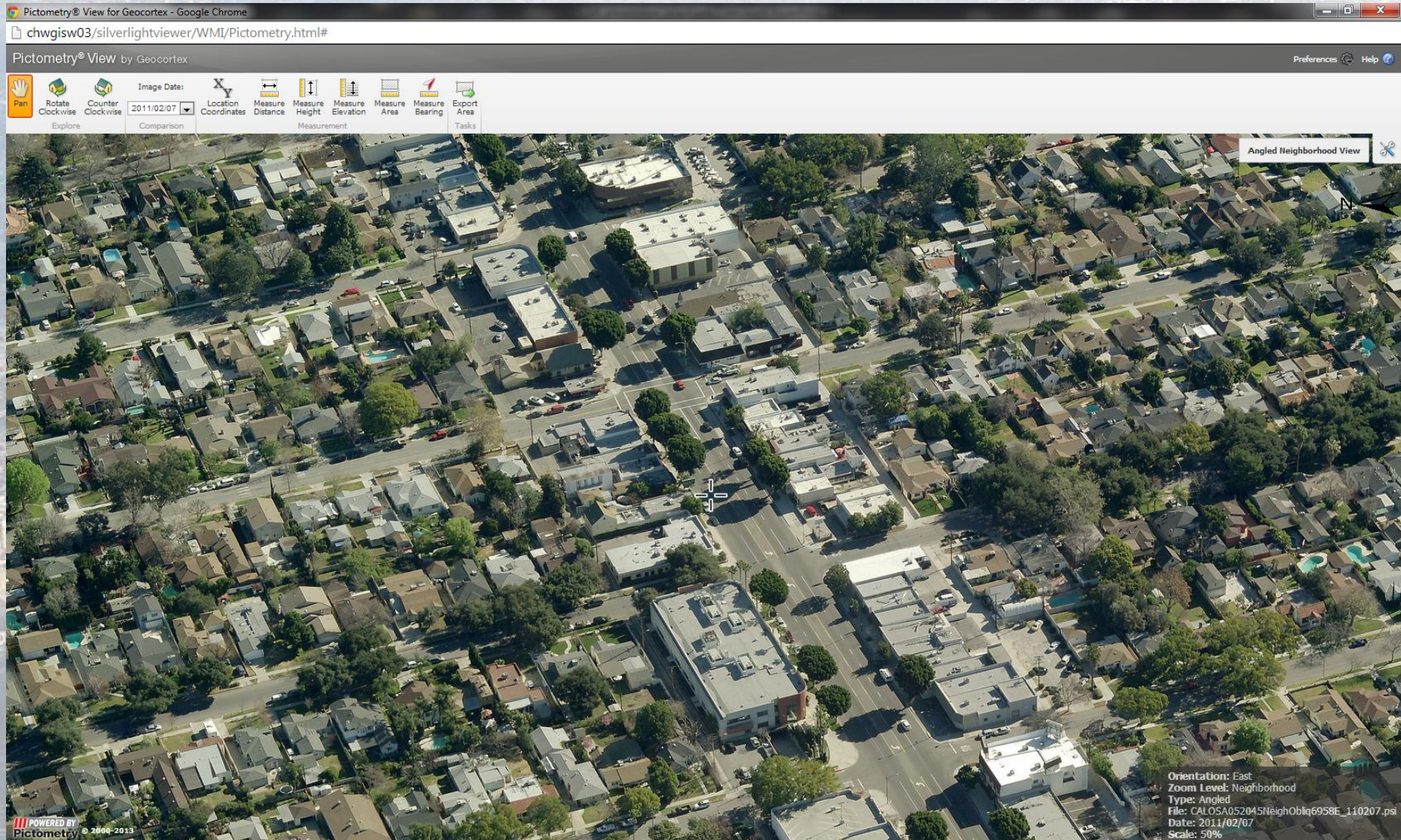
Storm Data & Mosaic



Linked Scans



Multiple Years & Multiple Views



LARIAC Use Case: Land Cover Changes

- Measured trees, grass, structures, hardscapes, swimming pools, and undefined areas (shaded areas) in 2000 and 2008 aerial images



2000



2008

An aerial photograph of a city skyline, likely San Francisco, showing a dense cluster of skyscrapers in the foreground and a vast, hilly residential area extending into the background. The text 'LARIAC TOOLS' is overlaid in the lower-left quadrant of the image.

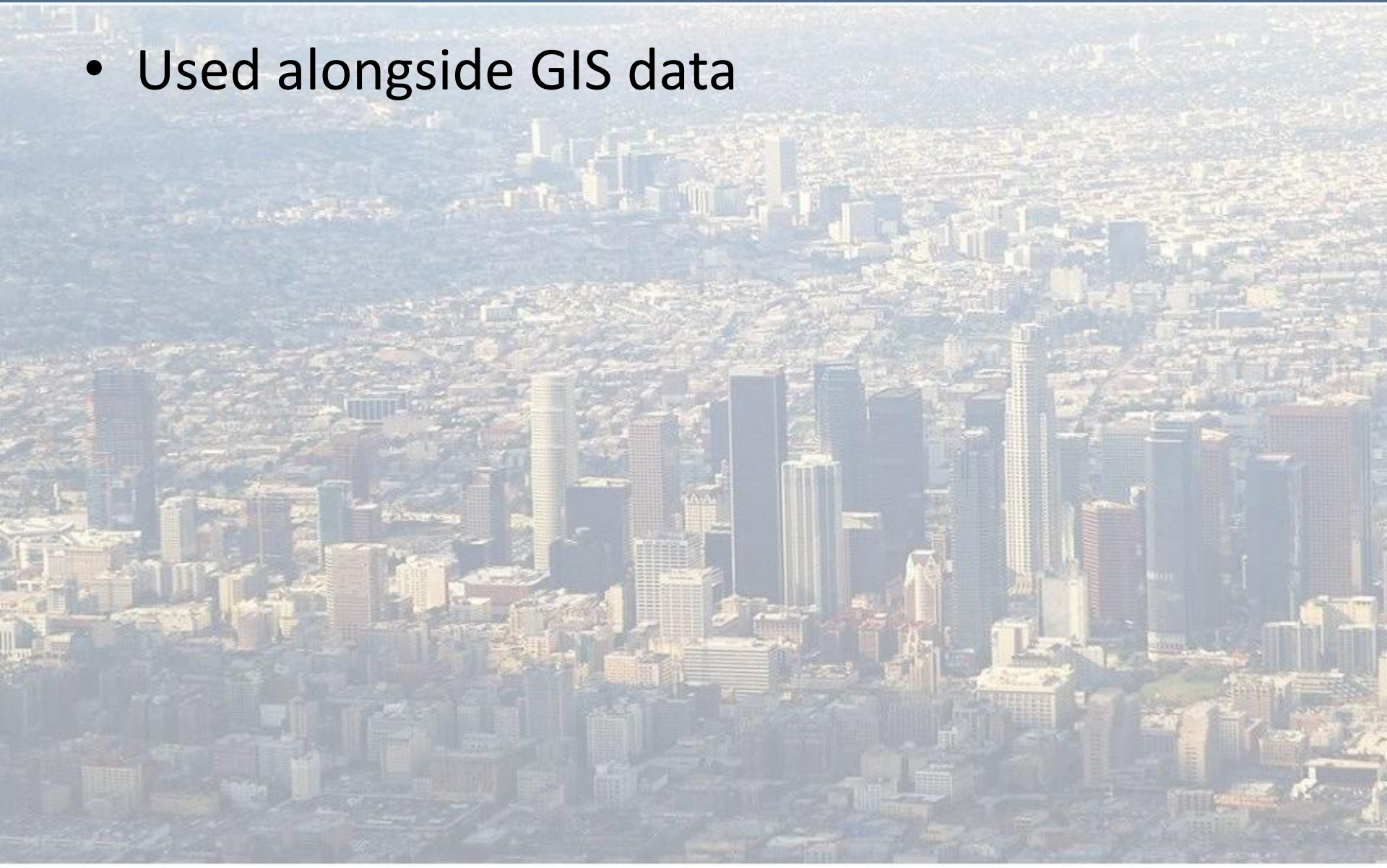
LARIAC TOOLS

Electronic Field Study

- The original method
- Desktop software
- Issues
 - Admin right requirements
 - “Touch” each computer
 - Updates were crazy
 - Local data storage (2-3 Tb) – fixed somewhat with NIW.
 - Cost of data storage (\$0.88 per Gb per month)

ArcGIS Plugin

- Used alongside GIS data



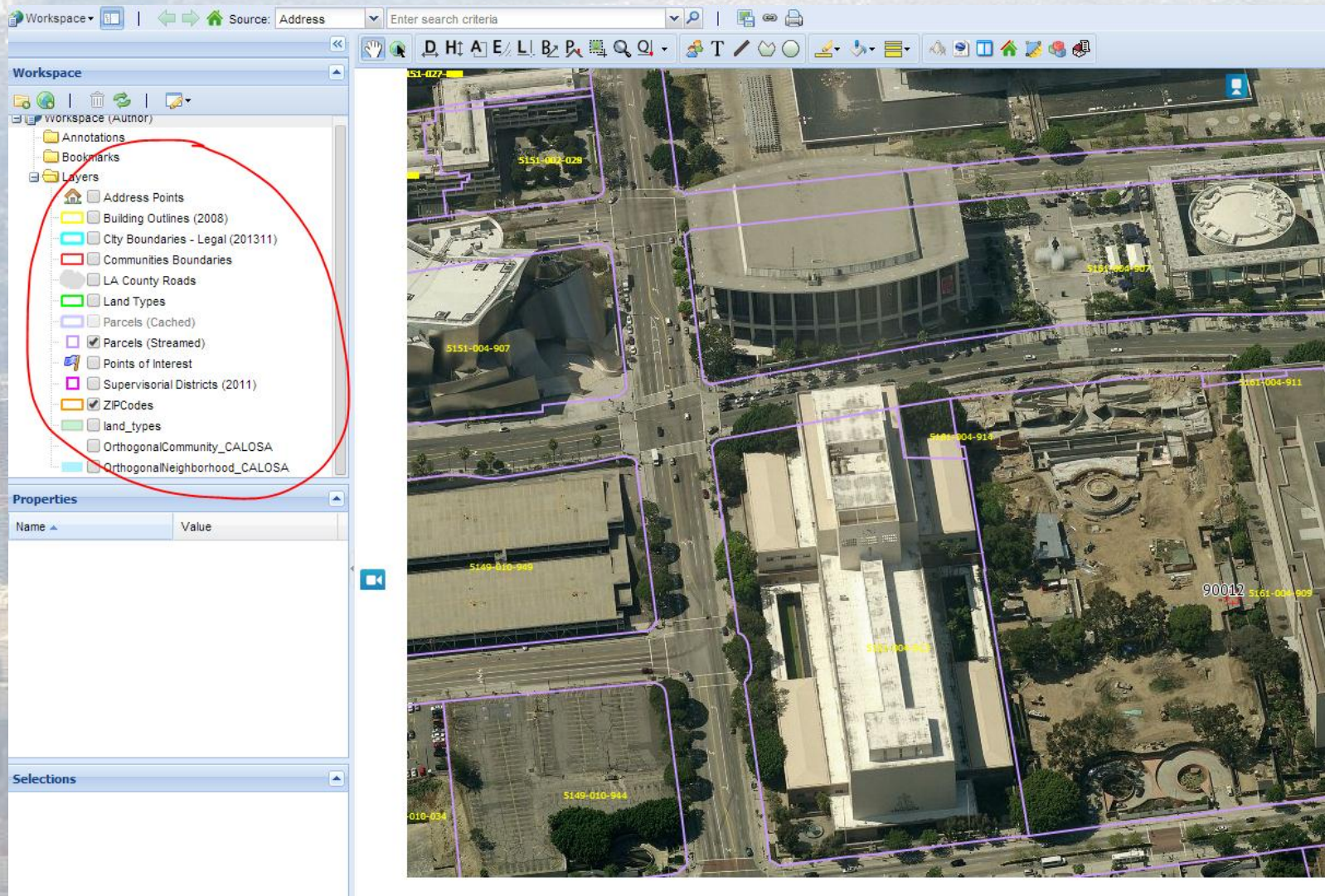
Pictometry Online

- Online Access via web browser
- Benefits
 - Reduced deployment times
 - Eliminated local storage size and cost
 - Access anywhere
 - Reduce update times

Pictometry Online

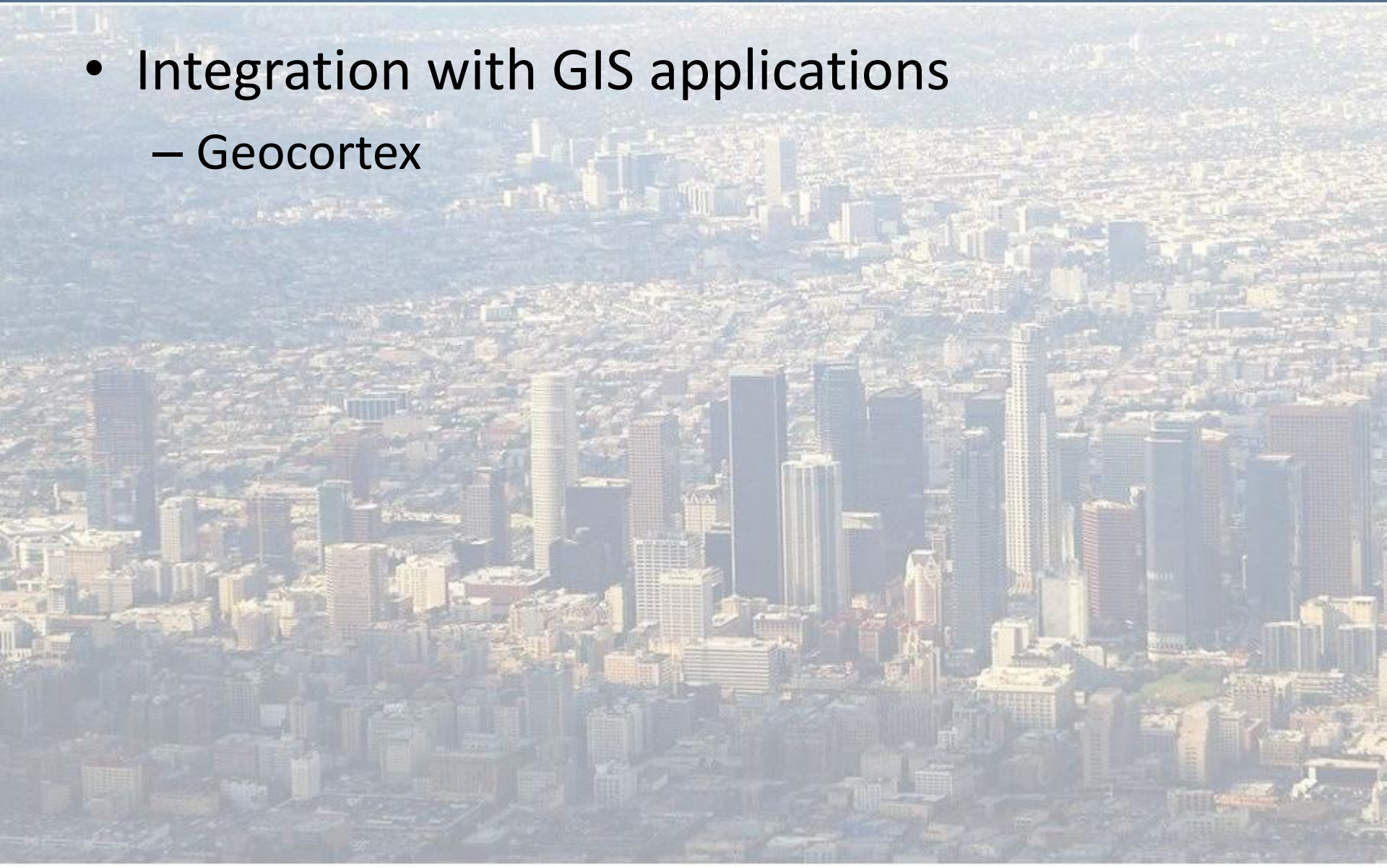
- Changes we have made
 - GIS data overlay
 - Sub-accounts
 - Generic users
- Control and flexibility!

Pictometry Online



POL

- Integration with GIS applications
 - Geocortex

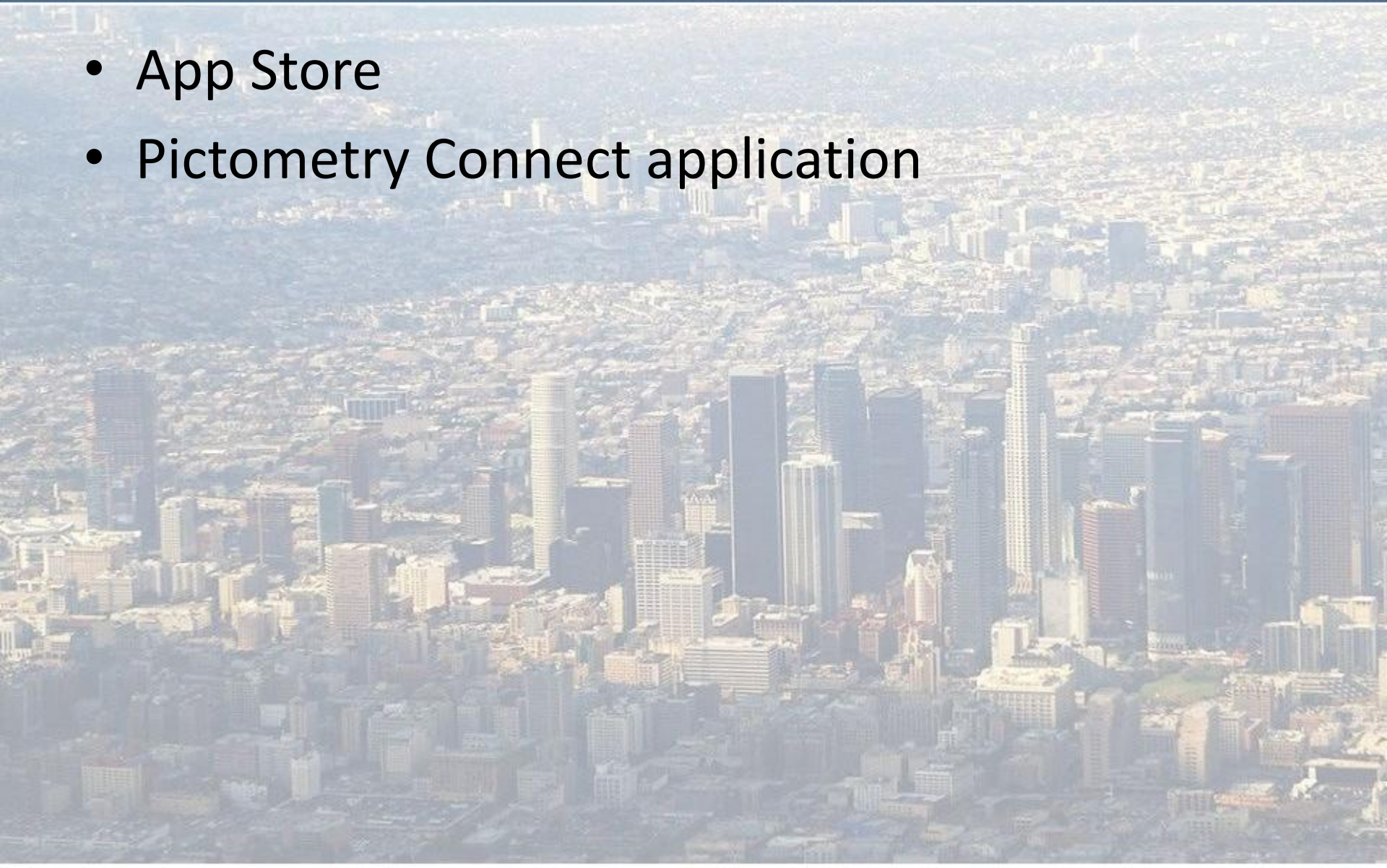


Pictometry IPA

- Makes capabilities embeddable
 - [Source](#)
 - [Example](#)
- Internal and external versions
- Waiting for GIS data overlay

Mobile Access

- App Store
- Pictometry Connect application



Test Drive!

To view LARIAC data in action visit the LA County GIS Viewer

<http://gis.lacounty.gov/gisviewer>

Access to Pictometry Online

Go to: **<http://pol.pictometry.com>**

Email Address: **test@lariac.gov**

Password: 4lariac4test!